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10/520,363

01/06/2005

Hideki Uchida

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EXAMINER

CARTER III, ROBERT E

ART UNIT

PAPER NUMBER

2609

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/520,363

Applicant(s)

UCHIDA, HIDEKI

Examiner

Robert E. Carter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01/06/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) \*
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 01/06/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As for claim 9,

The axis of the light emitting molecules with which one must measure against the display surface to determine whether they are parallel is not specified, so any axis can be chosen. Furthermore, a line drawn between the opening in the back electrode and the light receiving device is not perpendicular to the display surface in any of the drawings of the specification, yielding this claim unsupported by the specification.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, and 6-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamazaki et al. (US Patent # 7,030,551).

As for claims 1-4, and 6-14,

Yamazaki teaches:

A display apparatus, comprising:

A display panel including a light emitting device (Fig. 14B, #269) for each of a plurality of pixels for displaying an image by using light that is output from the light emitting device toward a panel front side; and

a light receiving device (Fig. 14B, #306) provided on the display panel for each of the plurality of pixels for receiving a portion of light output from the light emitting device toward a panel back side that is reflected by an irradiated object (Fig. 14B, #270) located on the panel back side.

Wherein the display panel is an active matrix type display panel (Col. 1, lines 15-16) including a substrate (Fig. 14B, #200) and a light emission control section (Fig. 14B, #302) provided on the substrate for controlling light emission of the light emitting device, with the light emitting device and the light receiving device being provided on the substrate.

Wherein the display panel includes a color filter (Col. 14, lines 32-34) provided so as to overlap with at least a portion of a light receiving surface of the light receiving device.

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Wherein the display panel includes a light blocking layer (Fig. 16, #280) provided between the light emitting device and the light receiving device.

Wherein the light emitting device includes a light emitting layer (Fig. 14B, #266) containing light emitting molecules, and a pair of electrodes (Fig. 14B, #264, 267) opposing each other via the light emitting layer therebetween.

Wherein one of the pair of electrodes that is provided on the panel back side is made of a transparent conductive material.

While Yamazaki et al. does not explicitly state that the rear electrode structures (Fig. 14B, # 264) are transparent, this feature is implied by the arrow representative of a light ray in Fig. 14B that is emanating from the EL element 266, passing through the electrode structure 264, and being reflected off of the subject 270 onto the photodiode 306. This operation is also described in Col. 23, lines 24-26.

Wherein one of the pair of electrodes that is provided on the panel back side includes an opening therein (Fig. 14B, Gap between 264 and 265). Furthermore, a clear rear electrode structure as required by claim 7 would not need a opening to perform the same function of letting light from the light emitting device through to the back of the display device.

Wherein the light emitting molecules contained in the light emitting layer are oriented so as to be generally parallel to a surface of the display panel on the panel back side and generally perpendicular to a straight line between the opening and the light receiving device.

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The light emitting layer (Fig. 14B, # 266) containing the light emitting molecules is parallel to the surface of the substrate (Fig. 14B # 200) on the back side. It is further perpendicular to a straight line between the opening (Fig. 14B, Gap between 264 and 265) and the light receiving device (Fig. 14B, # 306).

Wherein a light emitting portion of the light emitting layer is localized toward the electrode including the opening therein.

The portion of the light emitting layer located closest to the opening and the light receiving device is, by its proximity to these structures, localized towards them.

Wherein the light emitting device is an organic electroluminescent device (Col. 2, lines 7-9, 24-27).

Wherein the display panel is flexible (Col. 37, lines 30-36).

Further comprising a storage device (Fig. 14B, #304) for storing image information that is read by the light receiving device receiving light reflected by the irradiated object.

Wherein the display apparatus has a function of displaying image information that is read by the light receiving device receiving light reflected by the irradiated object (Abstract, lines 1-6).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (US Patent # 7,030,551) in view of Street et al. (US Patent # 5,920,401).

As for claim 5,

Yamazaki et al. teaches all the claimed limitations of claim 1, however, Yamazaki et al. does not teach the limitations of claim 5.

Street et al. teaches:

A display apparatus, comprising:

A display panel including a light emitting device (Fig. 4, # 126) for a plurality of pixels (Fig. 4, # 102) for displaying an image by using light that is output from the light emitting device toward a panel front side; and  
a light receiving device (Fig. 4, # 132) provided on the display panel for each of the

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plurality of pixels for receiving a portion of light output from the light emitting device toward a panel back side that is reflected by an irradiated object (Fig. 4, # 10) located on the panel back side.

Wherein the display panel includes a light converging section (Fig. 4, # 130) provided on the panel back side of the light emitting device.

Therefore, since Yamazaki et al. and Street et al. are in the same field of endeavor, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the display device in Yamazaki et al. with the light converging section in Street et al. to increase the sensitivity of the light receiving devices.

8. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (US Patent # 7,030,551) in view of Kiyohara (US Patent # 5,327,503).

As for claim 15,

Yamazaki et al. teaches all the claimed limitations of claim 14, however, Yamazaki et al. does not teach the limitations of claim 15.

Kiyohara teaches:

A display device including a display panel (Fig. 1, # 11), an image scanner (Fig. 1, # 12), and a CPU (Fig. 6, # 32).



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Kiyohara further teaches that after an image is scanned, it is processed by the CPU (Col. 1, lines 54-56), and that these processes can include inversion of the image (Col. 8, lines 42-47).

Therefore, since Yamazaki et al. and Kiyohara are in the same field of endeavor, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the display device in Yamazaki et al. with the CPU and image processing ability in Kiyohara to increase the usability of the scanner and display.

As for claims 16-18,

Yamazaki et al. in view of Kiyohara teaches all the claimed limitations of claim 15, and further teaches:

An image reading/displaying system comprising a display medium (Fig. 14B, #269) to which the image information is written by the display apparatus displaying the read image information.

Wherein the display medium includes a display medium layer (Yamazaki et al., Fig. 14B, #266), a pair of electrodes (Yamazaki et al., Fig. 14B, #264, 267) opposing each other via the display medium layer therebetween, and a photoconductive layer (Yamazaki et al., Fig. 14B, # 306) provided on a display medium layer side of one of the pair of electrodes.

Wherein a voltage (Yamazaki et al., Fig. 1,  $V_x$ ) is applied to the pair of electrodes of the display medium by using a power supplied from the display apparatus (A power supply

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is a well known feature that is inherently required to provide the voltage to voltage line Vx).

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Nishimura (US Patent # 6,040,810) discloses an LCD device with a photosensor at each pixel.

Wei et al. (US Patent # 5,929,845) discloses an EL display with pixels operable as photodetectors or EL elements.

Itoh et al. (US Patent # 5,585,817) discloses an LCD device with a photosensor at each pixel.

Friend et al. (US Patent # 5,523,555) discloses an EL display with pixels operable as photodetectors or EL elements.

Bird et al. (US Patent # 5,483,263) discloses an LCD device with a photosensor and lens at each pixel.

Mawatari et al. (US Patent # 5,446,564) discloses an LCD device with a photosensor at each pixel.

Kikinis (US Patent # 5,331,434) discloses a photodetecting film that can be applied to any lighted panel display.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert E. Carter whose telephone number is 571-270-3006. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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